



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

#20/Decl.  
9/12/03

In re PATENT APPLICATION OF

MILLER et al.

Group Art Unit: 3643

Appln. No.: 09/682,247

Examiner: K. ROWAN

Filed: August 9, 2001

Title: COUNTERFLOW INSECT TRAP

\* \* \* \* \*

**DECLARATION TRAVERSING REJECTIONS UNDER 37 C.F.R. § 1.132**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**RECEIVED**

SEP 03 2003

**GROUP 3600**

Sir:

The undersigned is the President of American Biophysics Corporation ("ABC"), which is the assignee of United States Patent Application No. 09/682,247 ("the '247 application") for the Counterflow Insect Trap. ABC is engaged in the manufacture and sale of insect traps, and in particular of counterflow insect traps embodying the subject matter claimed in accordance with the '247 application.

Included below as Table 1 is a list of counterflow insect traps (branded the "Mosquito Magnet") sold by ABC between March 1998 and June 30, 2003. A total of 313,246 traps have been sold during that time period with a projected sales number for the end of 2003 of 389,743. From the chart, it is evident that sales have increased each year from 1998, despite the introduction to the marketplace of several competing brands of trap.

The counterflow insect traps sold were constructed according to the disclosure and claims of the present application. The traps sold all use "counterflow" technology to attract and capture insects where "counterflow" means providing an outflow comprised of air and an insect attractant out of the device to atmosphere and an inflow directed counter to the outflow, insects being urged into the device by the inflow. The counterflow insect traps are especially effective at trapping blood-seeking insects such as mosquitoes, no-see-ums, black flies and sand flies. The traps range in price from about \$260.00 to about \$1,295.00.

Specifically, ABC's Mosquito Magnet sales are shown below in Table 1:

1998-2003 Unit Sales

	1998	1999	2000	2001	2002	2003 YTD 6/30/03	2003 Rest of Year (Forecast)	Total	Retail \$
PRO	75	582	3,825	15,913	27,915	13,390	3,135	64,835	\$1,295
Freedom	0	0	835	15,759	18,193	0	0	34,787	\$795
Liberty	0	0	0	0	60,422	62,052	15,871	138,345	\$495
Defender	0	0	0	0	0	84,781	57,491	142,272	\$295
Garden Edition	0	0	0	0	0	9,504	0	9,504	\$260
<b>Total</b>	<b>75</b>	<b>582</b>	<b>4,660</b>	<b>31,672</b>	<b>106,530</b>	<b>169,727</b>	<b>76,497</b>		
						<b>Total Projected 2003</b>			
						<b>246,224</b>			
						<b>Total Units Sold</b>		<b>313,246</b>	
						<b>Projected Sales End of 2003</b>		<b>389,743</b>	

TABLE 1

As may be seen from Table 1, ABC has experienced tremendous unit sales growth from year to year. From 1998 to 1999, unit sales increased by 676%, from 1999 to 2000 by 700%, from 2000 to 2001 by 579%, and from 2001 to 2002 by 236%. Unit sales for 2003 are projected to increase from 2002 sales by a further 131%. In all, unit sales have grown over the five year period beginning in 1998 by a factor of nearly 3000.

Prior to ABC's introduction of counterflow insect traps into the market, I know of no flying insects traps that were sold commercially to the general public in the \$1,000.00 price range. At the time ABC began selling its counterflow traps, flying insect traps and killing devices such as "bug zappers" and similar devices, were priced in the vicinity of approximately \$50.00 to \$80.00. As noted above, the price of ABC's traps ranges between \$260 and \$1295, and for the first four years of sales, the price was between \$795 and \$1295. During those first four years, despite the fact that the ABC traps cost 10-25 times as much as other devices on the marketplace (i.e., those devices mentioned above in the \$50-80 price range), ABC experienced an average annual growth rate of 600% in its unit sales of counterflow insect traps. Further, in the years 2001 and 2002, when ABC began introducing lower priced counterflow insect traps, ABC still experienced growth rates of 236% and 131%, respectively. Still, those lower priced counterflow insect traps are priced significantly higher than the other devices on the market in the \$50-\$80 price range.

Given the large disparity in price between ABC's counterflow insect trap and other devices on the market, it is evident from the rapid growth shown above in Table 1, that ABC's counterflow trap works substantially better than any alternatives available in the marketplace. Along with the "bug zapper" type traps, the industry standard was the "CDC light trap," developed by the Centers for Disease Control in the 1960s. These types of traps also cost on the order of \$100 or less, much less than the ABC traps listed above and similar to the bug zapper traps. Customers have been willing to pay between five and 20 times the price of many of the other devices that were on the market (e.g., the \$50 to \$80 devices mentioned above). This success came about because the ABC counterflow traps work substantially better than other devices because the ABC traps capture and eliminate large numbers of insects.

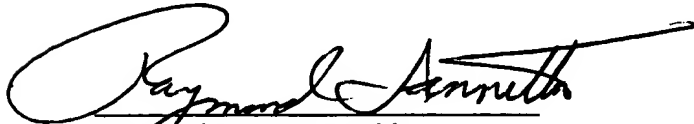
Because of the effectiveness of the ABC devices in catching blood-seeking flying insects, particularly mosquitoes, no-see-ums, black flies and sand flies, ABC, as a newcomer to the commercial market as discussed above, has been able to sell 313,246 traps to date. Total retail sales of well over one hundred million dollars have been made. The unit sales continue to increase steadily despite several years of continuous growth and the introduction of additional competing products. The commercial success of the ABC traps is clear.

As verified by Dr. Kline of the United States Agriculture Department in a letter sent to ABC in October of 1998 and attached to this affidavit, the success of the device in capturing large numbers of insects appears is due to the counterflow technology. The trap captures large numbers of blood-seeking flying insects by attracting them to the trap using an outflow of air containing an insect attractant that causes the insects to fly along the edge of the attractant and the insects are urged into the device with the inflow.

Various models of the Mosquito Magnet, a brand name for ABC's traps, have been favorably tested and reviewed in the Wall Street Journal (July 20, 2001), Consumer Reports (May, 2003), The Boston Globe (July 6, 2001; July 2, 2003), The Miami Herald (July 22, 2002), and The Washington Post (July 14, 2002; July 18, 2002).

In five independent studies, models of the Mosquito Magnet were found to be more effective than competitors' products. These studies were performed by the Cayman Islands Mosquito Research & Control Unit; Florida A&M University; Tayor Environmental and Biological Specialists; University of North Dakota; and U.S. Army Medical Command in conjunction with the Centers for Disease Control. Attached to this affidavit is a sheet summarizing the five studies.

The undersigned acknowledges that willful false statements and the like are punishable by fine or imprisonment, or both (18 U.S.C. 1001) and may jeopardize the validity of the application or any patent issuing thereon. All statement made based on the declarants's own knowledge and all statements made on information and belief are believed true.



Raymond Iannetta, President  
American Biophysics Corporation  
Date: July 3, 2003



United States  
Department of  
Agriculture

Agricultural  
Research  
Service

South Atlantic Area  
Center for Medical,  
Agricultural and  
Veterinary Entomology

1600/1700 SW 23<sup>rd</sup> Drive  
P. O. Box 14565  
Gainesville, FL 32603

Gail M. Taylor-Russell  
Russell & Russell, L.L.P.  
8810 Business Park Drive, Suite 100  
Austin, TX 78759-7437

Dear Ms. Taylor-Russell,

As research entomologist for the USDA, my research objectives include identification of innovative surveillance technologies for mosquitoes and biting midges, and development of novel control technologies (e.g. removal trapping) for adult mosquitoes and biting midges. Since working with these goals from the early eighties, I have had the opportunity to work with virtually all of the hardware products available commercially as well as those only available as prototype units. In this mix of products, I have tested bug zapper traps from several manufacturers, including DeYorco's bug zapper with a fan.

I began testing devices developed by American Biophysics Corp. in 1994, and have tested counterflow technology products under a non-disclosure agreement since June of 1996. To date, I can attest that there has not been another trapping device tested that achieves the level of performance of American Biophysics' counterflow technology. When other traps are compared to the counterflow traps, the numbers of captured target insects, is significantly higher in the counterflow devices. This result can only be ascribed to the novel geometry that these traps utilize.

Sincerely,

Daniel Kline, PhD  
Research Entomologist



**MOSQUITO MAGNET®**  
*Fatal Attraction for Mosquitoes*

## **MOSQUITO MAGNET® INDEPENDENT STUDIES FACT SHEET**

### **CAYMAN ISLANDS MOSQUITO RESEARCH & CONTROL UNIT, CAYMAN ISLANDS (JULY 2002)**

**Abstract:**

- The Mosquito Magnet® Liberty was tested against the Coleman Mosquito Deleto™ and the Applica SonicWeb™ over a nine-day period in a mosquito infested mangrove swamp in the Cayman Islands.

**Results:**

- The Mosquito Magnet® Liberty caught 7,161 mosquitoes, nearly 200 times more mosquitoes than Coleman's Mosquito Deleto™, which caught 37 mosquitoes. The SonicWeb™ caught only five.
- The Mosquito Magnet® Liberty caught nine mosquito species, which is 300% more than the other traps tested.
- In further testing in an urban area with a relatively low mosquito population, the Liberty trapped 286 mosquitoes over a 17-day period compared to only five trapped by the Mosquito Deleto™. The SonicWeb™ was not tested in the urban setting due to the lower number of mosquitoes collected in the area with a dense mosquito population.

### **FLORIDA A&M UNIVERSITY, PUBLIC HEALTH ENTOMOLOGY RESEARCH & EDUCATION CENTER, PANAMA CITY, FLORIDA (SUMMER 2001 AND SUMMER 2002)**

**(2001)**

**Abstract:**

- The Mosquito Magnet® Pro was tested against the Flowtron Inc. Mosquito PowerTrap (also known as the Mosquito Eliminator) in a tropical salt marsh in Panama City, Florida.
- Traps were randomly assigned to four sites separated by distances of at least 300 ft., and operated for 16 hours.

**Results:**

- The Mosquito Magnet® Pro captured 10 times more mosquitoes than the Mosquito PowerTrap.

**(2002)**

**Abstract:**

- In a second test, the mosquito-capturing prowess of the Mosquito Magnet® Liberty was tested against seven other commercial traps on the market including the Mega-Catch™ and the SonicWeb™.

**Results:**

- The Mosquito Magnet® Liberty out caught four of the commercial models by 6 to 1 and it out caught the other models by at least 2.5 to 1.
- The Liberty also captured more species of mosquitoes than any other trap tested.

**DR. L.R. TAYLOR, TAYLOR ENVIRONMENTAL AND BIOLOGICAL SPECIALISTS  
Holiday Township, Marloth Park, Eastern Mpumalanga, RAS  
(July 2002)**

**Abstract:**

- The efficacy of the Mosquito Magnet® Pro was examined in the eastern Mpumalanga province of South Africa in less desirable winter conditions over a period of 6 days.
- The Mosquito Magnet® Pro was placed in two localities, a mixed woodland area with standing water in close proximity and a developed commercial facility comprising of a restaurant with an open deck overlooking a swimming pool and game watering hole.

**Results:**

- The Pro successfully captured biting midges and mosquitoes from six different taxa in limiting winter conditions. This suggests that the unit will be highly effective in spring, summer and autumn conditions.
- The capture rate for the Mosquito Magnet® Pro proves its ability to attract biting insects.
- The unit is able to capture taxa in proportion to that found to land on and bite human hosts. In addition, mosquito landing and biting rates diminish in the presence of the operating machines.

**STUDY BY DR. JEFFERY VAUGHN, DEPARTMENT OF BIOLOGY,  
UNIVERSITY OF NORTH DAKOTA, GRAND FORKS NORTH DAKOTA (SUMMER 2002)**

**Abstract:**

- The study examined the capturing ability of the Mosquito Magnet® Pro and Liberty versus the New Jersey light trap over a 44-day period in two similar residential neighborhoods.

**Results:**

- The Mosquito Magnet® trap caught 20 to 30 times more mosquitoes than the New Jersey light trap.
- The Mosquito Magnet® reduced biting intensity in treated neighborhoods under certain conditions.

**U.S. ARMY MEDICAL COMMAND, THE CENTERS FOR DISEASE CONTROL, REPUBLIC OF  
KOREA (SUMMER 2000)**

**Abstract:**

- Field tests of seven different mosquito traps were conducted where recent outbreaks of malaria had occurred near the U.S. base at Camp Greaves in South Korea.
- The tests were conducted in areas that hadn't been sprayed and that had large known populations of mosquitoes.

**Results:**

- According to the *Journal of the American Mosquito Control Association*, September 2001, the Mosquito Magnet® captured three times more mosquitoes than the next most effective trap, and over 13 times as many as others - even other traps that use CO<sub>2</sub> and octenol attractants.